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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/536,821

05/27/2005

Andrew Douglas Bankhead

AMTH-101US

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07/03/2007

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P O BOX 980

VALLEY FORGE, PA 19482-0980

EXAMINER

HANSEN, JONATHAN M

ART UNIT

PAPER NUMBER

2886

MAIL DATE

DELIVERY MODE

07/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/536,821	Applicant(s) BANKHEAD, ANDREW DOUGLAS	
	Examiner Jonathan M. Hansen	Art Unit 2886	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 104-127 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 127 is/are allowed.
- 6) ☒ Claim(s) 104-110, 115-117 and 121-126 is/are rejected.
- 7) ☒ Claim(s) 111-114, and 118-120 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1010/31/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 112 and 120 are objected to because of the following informalities: In claim 112, line 2, "means is arranged to" should be deleted; In claim 120, line 2 the word "tow" should be changed to "two". Appropriate correction is required.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 124 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims are directed to a judicial exception, a signal; as such, pursuant to the Interim Guidelines on Patent Eligible Subject Matter (MPEP 2106), the claims must have either physical transformation and/or a useful, concrete and tangible result. The claims fail to include transformation from one physical state to another. Although, the claims appear useful and concrete, there does not appear to be a tangible result claimed. Merely causing a processor to carry out a method would not appear to be sufficient to constitute a tangible result. As such, the subject matter of the claim is not patent eligible.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 104-107, 115, 121-123, 125 and 126 are rejected under 35 U.S.C. 102(b) as being unpatentable by US Pat. # 5,953,124 to Deck.

With regard to claims 104 and 126, Deck discloses a surface profiling apparatus for obtaining surface profile data for a sample surface, the apparatus comprising: a light director (col. 7, ll. 15; fig. 1, 22); a mover (col. 7, ll. 24; fig. 1, 32); a sensor (col. 7, ll. 46; fig. 1, 36); a data processor (col. 7, ll. 61-65; wherein the microprocessor of the computer is viewed as the processor); and a surface profiler (col. 7, ll. 65 to col. 8, ll. 30; the 3D interferogram of line 26 is viewed as the generated surface profile.); the apparatus further comprising an image enhancer (col. 7, ll. 61-65; wherein the computer is viewed as the image enhancer that is connected to a display.).

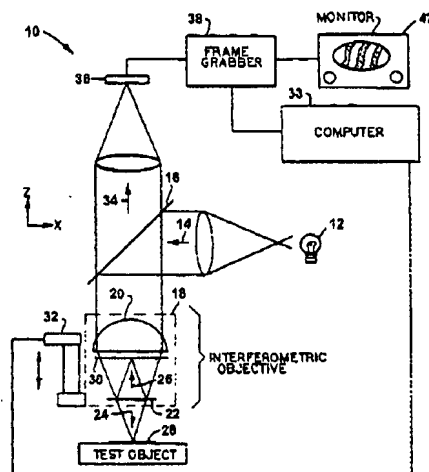


FIG. 1

As to claim 122, the claimed method merely discloses the steps performed by the device; the method would be inherent in view of the device.

As to claims 105, 106 and 107, Deck discloses an apparatus, wherein the image enhancer comprises a gradient determiner or a contrast determiner operable to determine from a set of light intensity data light intensity gradient data or contrast difference data and a modifier operable to modify the image data to be displayed in accordance with the determined gradient data (col. 7, ll. 61-65; wherein the computer is viewed as the image enhancer and the framegrabber is viewed as the modifier. Also, Col. 5, ll. 29-50; wherein the height determination and contrast determination are done within the computer.).

As to claim 115, Deck discloses an apparatus, further comprising a user operable device that enables a user to select the reference set (col. 10, ll. 18-30; wherein the reference pixel is selected within the computer. It is inherent that computers have controllers to make them user operable.).

As to claim 121, Deck discloses an apparatus, further comprising a surface form extractor (col. 7, ll. 65 to col. 8, ll. 30; wherein the surface form extractor is viewed as the same as a surface profiler.).

As to claim 123, Deck discloses a method, further comprising determining from the positions at which the predetermined feature occurs in the light intensity data for the different

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sensed regions the relative surface heights of the different sensed regions to provide a surface profile (col. 5, ll. 40-43).

As to claim 125, Deck discloses a storage medium carrying processor-implementable instructions for causing processor means to carry out a method (col. 7, ll. 61-65; wherein the computer contains a storage medium for the executable software.).

The recitation of the functional language following “operable to” of each structural element is only a statement of the inherent properties of each claimed element. The structure recited in Deck is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Or where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 195 USPQ 430, 433 (CCPA 1977) and MPEP 2112.01.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 108-110 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deck, and in view of US Pat. # 5,471,303 to Ai et al.

As to claims 108 and 110, Deck further discloses the pixels are in the x-y plane and use x-y coordinates (col. 8, ll. 50-51). Deck substantially discloses the claimed invention however, he differs from the limitations of claims 108 and 110 in that he does not explicitly disclose comparing the light intensity data values associated with regions on either side of the region that provided the light intensity data value.

Ai teaches the determination by reference to a region or a plurality of adjacent pixels (col. 10, ll. 35-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Deck to compare adjacent regions for the advantages of very consistent and repeatable height measurements, as taught by Ai.

As to claim 109, Deck substantially discloses the claimed invention however, he differs from the limitations of claim 109 in that he does not explicitly disclose an apparatus, wherein the regions are arranged in a rectangular array.

Deck discloses a square CCD array (col. 7, ll. 40-46).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the square CCD of Deck into a rectangular array for the advantages of having a larger imaging area.

The recitation of the functional language following “operable to” of each structural element is only a statement of the inherent properties of each claimed element. The structure

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recited in Deck is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Or where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established.

In re Best, 195 USPQ 430, 433 (CCPA 1977) and MPEP 2112.01.

7. Claims 116 and 117 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deck as applied to claim 104 above, and further in view of US Pat. # 4,040,747 to Webster.

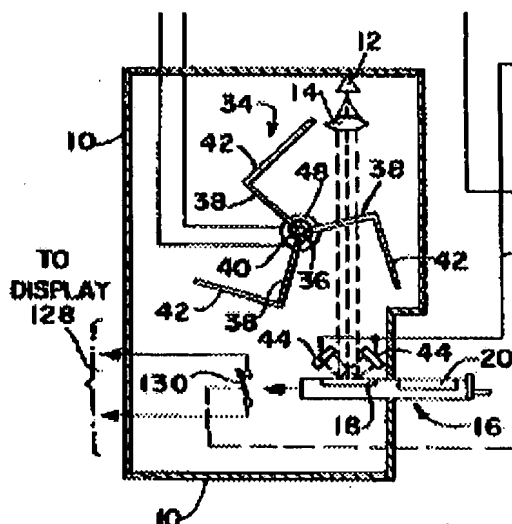
With regard to claims 116 and 117, Deck substantially discloses the claimed invention however, he differs from the limitations of claims 116 and 117 in that he does not explicitly disclose an apparatus, wherein a filter assembly mounted in a light path from the light source and having a housing having a filter carrier mounted in the housing so as to be rotatable about an axis, the filter carrier having a plurality of filters spaced around the axis and having a peripheral surface provided with land portions each associated with a corresponding filter and each distinguishable by a user for allowing a user to rotate the filter carrier to bring a selected filter to a predetermined position.

Webster teaches and shows in Figure 1 (shown modified below) a multiple filter assembly in the form of a paddlewheel that is rotatable about an axis (col. 4, ll. 1-11). The figure below shows a filter assembly (fig. 1, 34) mounted in a light path from the light source (fig. 1, 12) and having a housing (fig. 1, 10) having a filter carrier mounted in the housing so as to be

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rotatable about an axis (fig. 1, 40), and the filter carrier having a plurality of filters spaced around the axis (fig. 1, 38).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Deck to include a rotatable filter assembly for the advantages of sweeping the frequencies of the light source, as taught by Webster.



Allowable Subject Matter

8. Claim 127 is allowed.

As to claim 127, the prior art of record, taken alone or in combination, fails to disclose or render obvious a reference calibrator operable to calibrate the apparatus to compensate for surface features of the reference surface, the reference calibrator comprising: a user operable calibration initiator operable to initiate a calibration; a calibration controller operable to cause, in response to operation of the calibration measurement initiator, operation of the controller, data

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processor and surface topography determiner to carry out a number of calibration measurement operations to obtain in each calibration measurement operation calibration surface topography data for the calibration sample, in combination with the rest of the limitations of the claim.

9. Claims 111-114 and 118 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claim 111, the prior art of record, taken alone or in combination, fails to disclose or render obvious the modifier is operable to determine a modified intensity data value IM for a light intensity data value I associated with the region at coordinates x,y in accordance with: $IM = 64 + V2 + (I-i - I+i)X4$ where $I+1$ and $I-1$ are the intensity data values associated with the regions at coordinates $x+1, y+1$ and $x-1, y-1$, respectively, in combination with the rest of the limitations of the claim.

As to claim 112, the prior art of record, taken alone or in combination, fails to disclose or render obvious the contrast determiner is operable to means is arranged to determine the contrast difference data by subtracting from the intensity data value I of the set the corresponding intensity data value IR of the reference set, in combination with the rest of the limitations of the claim.

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As to claim 113, the prior art of record, taken alone or in combination, fails to disclose or render obvious the modifier is operable to determine a modified intensity data value IM for a light intensity data value I in accordance with: $IM = 64 + 1/2 + (I - IR) \times 4$ where IR is the corresponding intensity data value of the reference set, in combination with the rest of the limitations of the claim.

As to claim 114, the prior art of record, taken alone or in combination, fails to disclose or render obvious the modifier is operable to determine a modified intensity data value IM for a light intensity data value I associated with the region at coordinates x, y in accordance with: $IM = 64 + 1/2 + (I - IR) \times 4 + (I-i - I+i) \times 4$ wherein $I+i$ and $I-i$ are the intensity data values associated with the regions at coordinates $x+1, y+1$ and $x-1, y-1$, respectively, and IR is the corresponding intensity data value of the reference set, in combination with the rest of the limitations of the claim.

As to claim 118, the prior art of record, taken alone or in combination, fails to disclose or render obvious the image enhancer is operable to cause the majority of the light intensity data values to appear to be represented by a single color with the apparent lightness of the color varying with the light intensity data value such that the lightness either increases or decreases with increase in the light intensity data value and to cause at least one of a light intensity data value representing a highest light intensity, a light intensity data value representing a lowest light intensity and light intensity data values representing midrange light intensities to be displayed so as to appear to be of a different color to enable the user to identify the light intensity level

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represented by that light intensity data value, in combination with the rest of the limitations of the claim.

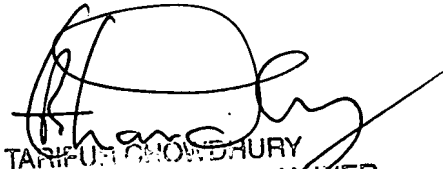
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan M. Hansen whose telephone number is 571.270.1736. The examiner can normally be reached on Monday through Friday 8:30AM to 6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on 571.272.2287. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMH


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